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Roger M. Polhill

Mike Crisp and Jeff Doyle have joined forces on the session provisionally allocated to higher-level phylogeny and molecular systematics respectively. It seems best to structure the systematic session by taxonomic groups above the genus level with more emphasis on phylogenetic analysis. There is a consensus that special emphasis should be given to the basal groups of genera in the traditional subfamilies. As Mike Crisp, Jenny Chappill, and Peter Weston said in the November 1988 *Bean Bag*, they are looking for contributors, particularly at the tribal level, and people working in more specialised fields who may be able to contribute data.

Professor Janet Sprent, Department of Biological Sciences, University, Dundee DD1 4HN, Scotland, Great Britain, Fax 44-382-22318, has kindly agreed to co-ordinate a session on rhizobial and mycorrhizal associations.

Just as a reminder from the last notice, the co-ordinators for structural botany are Keith Ferguson, Royal Botanic Garden, Kew, and Shirley Tucker, Louisiana State University; for reproductive biology, Beryl Simpson, University of Texas, Austin; and for biogeography, Charles Stirton, now at the Royal Botanic Garden, Kew.

Beltsville, MD 20705 USA

From the Editors

Charles R. Gunn and Joseph H. Kirkbride, Jr.

The BB is designed to promote communication among research scientists concerned with legume systematics. To achieve this goal the BB is issued in May and November of each year and features six columns: From the Editors, News (meetings, major events, announcements, etc.), New Readers, Gleanings, Nodulation and Nitrogen Fixation (new nodulation records), and Recent Legume Literature. Data in the Gleanings column are derived from questionnaire sheets which Readers complete and return. If you have news about legume systematics, send it to us for this column. The Recent Legume Literature column contains published research papers of specific interest to BB Readers. Recent is defined as one year old. We rarely will publish a citation that is more than one year old. Specific interest to BB Readers is defined as research papers of interest to a world wide group of legume systematic botanists. We encourage Bean Bag (BB) Readers to send us notices, observations, etc.

Diacritical marks can now be placed in the BB. If such marks should be placed in your name, address, publications, etc., please let us know. We are especially interested in correcting our Directory. Thank you.

The Bean Bag Available Electronically on TAXACOM

An electronic copy of *The Bean Bag* can be obtained from TAXACOM, a free online service for biosystematics and biogeography at the Buffalo Museum of Science, Buffalo, New York, USA. The system operator is Dr. Richard H. Zander. TAXACOM is available 24 hours daily at telephone number 716-896-7581 using 2400/1200/300 bps, 8 data bits, 1 bit stop, and no parity. Outside of the USA use CCITT at 2400 bps, otherwise use Bell protocols. *The Bean Bag* directories for 1986, 1987, 1988, and 1989 and this issue plus those for 1987, 1988, and 1989 are now available for downloading from library 37.

News From ILDIS

International Legume Database & Information Service

Frank A. Bisby and Sue Hollis

ILDIS is an international cooperative project to provide a global information service on the diversity and biology of the species of Leguminosae, approximately one twelfth of the worlds flowering plants. The orientation of this service will be to provide species diversity data to pure and applied biologists working on the utilisation of legumes and on their conservation, based on a high quality taxonomic checklist.

Phase 1 - Species Diversity Database

Phase 1 of ILDIS is to establish and maintain a species diversity database that covers all species of Leguminosae. It comprises species checklist data (scientific name, synonyms, tribe membership, and references), geographic distribution (by continents and countries), and "common knowledge data" (life form, habitat, conservation status, uses, vernacular names, and literature references for descriptors, illustrations, and maps).

The first batch of this data is now established as a fully operational database with data for 12,500 legume species from Africa, Europe and the New World running under the ALICE software on large MS-DOS microcomputers. In a six year project (1985-1991) staff at Kew (J. M. Lock), Reading

(ESFDS), and Missouri Botanical Garden (J. L. Zarucchi) provided data sets for the three areas and these were tested, edited and merged at the ILDIS Coordinating Centre by S. Hollis working with the database development team (R. Allkin, P. J. Winfield and D. Richardson). The Coordinating Centre is now embarking on the final stage in bringing this dataset to readiness, editing for taxonomic consistency being undertaken by an extensive international network of monographic taxonomic coordinators. ILDIS Taxonomic Coordinators should be hearing from ILDIS in the next month or two. Merging the datasets has taken longer than originally thought, but it is still planned to have this Phase 1 dataset ready for public use in late 1991.

Work has started on the second batch of data for the smaller number of legume species in the remaining areas of the world. Datasets are in an advanced state for Western Asia (Kew) and the Pacific (P. Horn, Lincoln College, New Zealand). Projects are in hand for Southern Asia (Kew), China (Guangzhou), Australia and USSR/Mongolia (Leningrad), and under discussion for Southeastern Asia, Far East, and Madagascar. It is planned to incorporate these datasets in a further merge and taxonomic editing exercise in 1992.

Once complete, ILDIS plans to maintain the Phase 1 Database continuously through cooperative work with the network of geographic compilers and taxonomic coordinators.

Phase 2 - Applied Botanical Data

Since the inception of ILDIS in 1985, it has been the intention to use the taxonomic checklist in the Phase 1 database as the backbone for further factual datasets covering data fields of diverse interest to pure and applied botanists. From the enormous range of possibilities discussed at the 2nd ILDIS workshop two project modules have now started and two more are actively seeking funding.

The Phytochemistry module is in progress, with ILDIS forming a partnership with Chapman & Hall publishers to collect and publish legume phytochemical data. I. Southon has now been working for over one year collecting data by searching *Chemical Abstracts* using legume generic names, and then tracking down the original references. The chemicals are recorded by legume species, subspecies or variety and include records for flavonoids and isoflavonoids, alkaloids, non-protein aminoacids, terpenoids, coumarins and related substances, cyanogenic glycosides, cyclitols, quinones and phenols, xanthenes, rare fatty acids, rare sugars and any other unusual constituents of low molecular weight. Southon recognises that *Chemical Abstracts* is not complete botanically and appeals for legume specialists to send him any photocopies or reprints of papers for inclusion (please send c/o Sue Hollis at the ILDIS Coordinating Centre).

The second module on which work has just started is the Nitrogen Fixation and Nodulation module. At the workshop it was recognised that simple nodulation records were needed as well as more complex descriptors. J. H. Kirkbride, Jr., is entering nodulation records to the database, starting with information given in Allen & Allen (1981) and subsequently adding to this literature records collected by himself and J. Sprent.

ILDIS Information Service

The ILDIS Executive is now involved in developing the public service to be started in 1991/1992. It looks certain that this will involve publications through Chapman & Hall publishers and one or more Legume Information Centres. The Executive is also exploring ideas for an on-line service, for CD-ROM distribution of the database with software, and extension of the dialcom/btgold electronic communication network used by the ILDIS participants. A number of aid organisations are being approached with a view to subsidising services to botanists and institutions in developing countries.

Send enquiries to: Dr. S. Hollis, ILDIS Coordinating Centre, Dept. Biology, University of Southampton, Southampton SO9 5NH, Great Britain (Dialcom/Telecom Gold 81:bio010), or to members of the ILDIS Executive: Dr. Frank A. Bisby (University of Southampton), Dr. Roger M. Polhill (Royal Botanic Gardens, Kew), and Dr. James Zarucchi (Missouri Botanical Garden).

Advances in Legume Biology

Edited by C. H. Stirton and J. L. Zarucchi

The proceedings volume for the Second International Legume Conference, sponsored jointly by the Missouri Botanical Garden and Royal Botanic Gardens, Kew, and held in St. Louis 23-27 June 1986, has been published as number 29 in Monographs in Systematic Botany from the Missouri Botanical Garden. It is dedicated to the memory of P. J. M. Brenan, former Director of the Royal Botanic Gardens, Kew, and a long-time researcher of the legume family. The soft-bound volume has 842 pages and contains the following 35 papers:

Introduction - J. L. Zarucchi

Life History Studies - N. R. Sackville Hamilton

Biological Implications of Leguminous Tree Architecture - R. A. A. Oldeman

Structure and Evolutionary Tendencies of Inflorescences in the Leguminosae - F. Weberling

Evolutionary Implications of Floral Ontogeny in Legumes - S. C. Tucker

Structure, Evolution, and Biology of Pollen in Leguminosae - P. Guinet & I. K. Ferguson

Pollen, Stigma, and Style Interactions in the Leguminosae - S. J. Owens & C. H. Stirton

Stigma, Style, Pollen, and the Pollen-Stigma Interaction in Caesalpinioideae - S. J. Owens

Pollen-Pistil Interactions in Leguminosae (Mimosoideae) - J. Kenrick & R. B. Knox

Pollen-Pistil Interactions (Papilionoideae) - K. R. Shivanna & S. J. Owens

A Multidisciplinary Approach to Pollination Biology in the Leguminosae - B. D. Schrire

Seed: Ovule Ratios, Selective Seed Abortion, and Mating Systems in Leguminosae - K. S. Bawa & D. P. Buckley

Natural History of a Wind-Pollinated Central American Dry Forest Legume Tree (*Ateleia herbert-smithii* Pittier) - D. H. Janzen

Ecological Success in Relation to Plant Form and Function in the Woody Legumes - P. W. Rundel

Legume Fruits--The Structure: Function Equation - J. S. Pate

Legume Seeds--The Structure: Function Equation - J. Van Staden, J. C. Manning & K. M. Kelly

Morphology and Aerodynamics of Wind-Dispersed Legumes - C. K. Augspurger

The Evolution of Genera in the Leguminosae - E. Small

Reproductive Changes Induced by Domestication - U. Plitmann & M. E. Kislev

The Benefits and Risks of Woody Legume Introductions - C. E. Hughes & B. T. Styles

Biological Implications of Genome Evolution - H. Rees & R. K. J. Narayan

The Legume--*Rhizobium* Equation: A Coevolution of Two Genomes - D. P. S. Verma & J. Stanley

Structure and Function of Root Nodules from Woody Legumes - J. I. Sprent, J. M. Sutherland & S. M. de Faria

Ecosystem Estimates of N₂-Fixation and Investigations of Nodule Metabolism Using Variations in the Natural Abundance of ¹⁵N - D. H. Kohl & G. Shearer

Intractions Between Herbaceous Legumes and Their Associated Rhizobia, Mycorrhizae, Pests, and Parasites - N. C. Schenck

Systematics and Ecology of Ectomycorrhizal Legumes - I. J. Alexander

Reflections on Mycorrhizal Research - R. Singer

A Model of Daily Leaf Movement in Relation to the Radiation Regime - T. J. Herbert

Cyanogenesis in the Leguminosae - D. S. Seigler, B. R. Maslin & E. E. Conn

Interactions Between Ants and Leguminous Plants - D. McKey

Aphid-Legume Interactions - M. S. J. Simmonds, W. M. Blaney, A. N. E. Birch & C. H. Stirton

Adaptive Radiation of *Acanthoscelides* in Seeds: Examples of Legume-Bruchid Interactions - C. D. Johnson

Chemical Interactions Between Bruchids and Legumes - A. N. E. Birch, M. S. J. Simmonds & W. M. Blaney

Databases, Information Systems, and Legume Research - F. A. Bisby

US\$100.00 from Department Eleven, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, USA; add US\$1.50 for shipment within USA and US\$2.50 for shipment outside of USA.

International Organization of Plant Biosystematics 1989 - 1992

William F. Grant

Participants from 23 countries attended the 5 day IOPB symposium chaired by Soichi Kawano, Kyoto University, and held at the Kyoto Municipal Hall. Highlights included: 22 papers by invited speakers; 3 poster sessions with a total of 102 posters; 1-day field trip to Nara; and 3-day post-symposium excursion to Tateyama. Like the preceeding IOPB symposia, the 1989 symposium helped weld friendships and initiate collaboration in research, especially between field and laboratory oriented workers.

The next IOPB symposium, to be held in 1992 at the Missouri Botanical Garden, St. Louis, will be hosted by Dr. Peter Raven.

Membership fees for the period 1990 to 1992 are US\$25.00 and may be sent to the Secretary-Treasurer Dr. H. C. M. den Nijs, Hugo de Vries Laboratorium, Biologisch Centrum Anna's Hoeve, Universiteit Van Amsterdam, Kruislaan 318, 1098 SM Amsterdam, The Netherlands, Tel: (020) 525-7660 and FAX: (31 20) 525-7715. Institutional fees are US\$10.00 annually.

Past President Dr. K. Urbanska, Geobotanisches Institut, Stiftung Rubel, ZurichbergstraÙe 38, CH-8044 Zurich, Switzerland, Tel: 01/256-3877 and FAX: 01/252-0192, has initiated an informal "Arctic-Boreal-Alpine Plant Biology" working group within the IOPB framework and details may be obtained from her.

Information for the *IOPB Newsletter* should be sent to Dr. Urbanska, Editor. *IOPB Newsletter* No. 13, 1989, is now available.

IOPB Chromosome Number Reports (no longer appearing *Taxon*) are published in the *IOPB Newsletter*. IOPB Chromosome Data 1, is published in Newsletter No. 13. Send information on chromosome numbers, banding patterns, molecular data, RFLPs, etc., to the editor of IOPB Chromosome Data, Dr. Clive A. Stace, Department of Botany, University of Leicester, Leicester LE1 7RH, Great Britain.

The Executive and Council Members for 1989-1992 are: **President:** Dr. Shoichi Kawano, Department of Botany, Faculty of Science, Kyoto University, Kyoto 606, Japan, Tel: 075-751-21111, Ext. 4131, Telex: 5422693 LIBKYU J; **Past President:** Dr. K. Urbanska, Geobotanisches Institut, Stiftung Rubel, ZurichbergstraÙe 38, CH-8044 Zurich, Switzerland; **Vice-President and President-Elect:** Dr. Peter H. Raven, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, USA, Tel: 314-577-5100; **Secretary-Treasurer:** Dr. H. C. M. den Nijs, Hugo de Vries Laboratorium, Biologisch Centrum Anna's Hoeve, Universiteit Van Amsterdam, Kruislaan 318, 1098 SM Amsterdam, The Netherlands, Tel: (020) 525-7660, FAX: (31 20) 525-7715; **Member ex officio** for the 1992 symposium: Dr. W. Hardy Esbaugh, Department of Botany, Miami University, 316 Biological Sciences Building, Oxford, Ohio 45056, USA, Tel: 513-529-4200. **Council Members:** M. T. K. Arroyo, Laboratorio de Sistemática y Ecología Vegetal, Departamento de Biología, Facultad de Ciencias, Universidad de Chile, Casilla 653, Santiago, Chile; Liv Borgen, Botanical Garden and Museum, University of Norway, Trondheimsveien 23B, 0562 OSLO 5, Norway; D. Cartier, Laboratoire de Biologie Végétale B, Université de Paris XI, Centre d'Orsay, Batiment 362, 91405 Orsay Cedex, France; Hsu Ping-sheng, Department of Biology, Fudan University, Handan Lu 220, Shanghai, China; Kunio Iwatsuki, Director, Botanical Garden, University of Tokyo, 3-7-1 Hakusan, Bunkyo, Tokyo 112, Japan; B. E. Jonsell, Bergianus Botanic Garden, Box 50017, 104 05 Stockholm, Sweden; Meredith A. Lane, University of Kansas Herbarium, 2045 Constant Ave., Lawrence, Kansas

66047, USA; John McNeill, Associate Director Curatorial, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario M5S 2C6, Canada; Arne Rousi, Department of Botany, University of Turku, SF-20500 Turku 50, Finland; Suzanne I. Warwick, Biosystematics Research Centre, Wm. Saunders Building, Central Experimental Farm, Ottawa, Ontario K1A 0C6, Canada.

Nodulation and Nitrogen Fixation

Legume Nodulation Reports not in Allen and Allen (1981)

Taxon	Status ¹	Nodule ² Shape	Source ³
<i>Acacia polyphylla</i> A.DC.	-		1
<i>Amburana acreana</i> (Ducke) A. C. Smith	-		1
<i>Barbieria pinnata</i> (Pers.) Baill.	-		1
<i>Bauhinia acreana</i> Harms	-		1
<i>Bauhinia longicuspis</i> Spr. ex Benth.	-		1
<i>Cassia fastuosa</i> Willd. ex Benth.	-		1
<i>Dalbergia inundata</i> Benth.	+		1
<i>Derris amazonica</i> Killip	+		1
<i>Dinizia excelsa</i> Ducke	-		1
<i>Enterolobium schomburgkii</i> Benth.	+		1
<i>Hymenaea reticulata</i> Ducke	-		1
<i>Machaerium inundatum</i> Ducke	+		1
<i>Mimosa pigra</i> L.	± ⁴		1
<i>Mimosa spruceana</i> Benth.	-		1
<i>Mimosa rufescens</i> Benth.	-		1
<i>Parkia decussata</i> Ducke	-		1
<i>Parkia multijuga</i> Benth.	-		1
<i>Pithecellobium saman</i> (Jacq.) Benth.	+		1
<i>Schizolobium amazonicum</i> Huber ex Ducke	-		1
<i>Stryphnodendron pulcherrimum</i> (Willd.) Hochr.	-		1

¹Status: +, root nodules reported as present; -, root nodules reported as absent; ±, the nodulation report conflicts with Allen and Allen (1981).

²Nodule shape: Ae, aeschynomeneoid; As, astragaloid (now referred to as caesalpinoid by Corby); Cr, crotalaroid; CrB, branched crotalaroid; CrS, simple crotalaroid; De, desmodioid; Gl, globose; Lu, lupinoid; Mu, mucunoid.

³Sources:

1. MAGALHAES and FREITAS DA SILVA. 1986/1987. Associcoes *Rhizobium* - leguminosas no Estado de Rondonia. Acta Amazonica 16/17(suppl.): 7-17.

⁴*Mimosa pigra* L. is reported as non-nodulating, and this is attributed to ecological conditions, i.e., soil type.

Gleanings

AGUILAR is preparing a seed identification manual, studying external secretory structures in Faboideae, and surveying Philippine legume taxa. Needs seeds and herbarium specimens of tropical legumes and offers same from the Philippines.

ARAMBARRI is continuing her study on vascular bundles in *Lotus* seeds (subgenera *Hosackia* and *Syrmatium*). Needs seeds of *Lotus* (subgenera *Hosackia* and *Syrmatium*) and offers seeds and fruits of *Lysiloma divaricata*, *Prosopis nigra*, and *Lotus* (Old World spp. and *L. purshianus* from the New World).

ARONSON has several papers in press, and needs seeds of poorly-known *Acacia* spp., especially subgenus *Acacia*, for nodulation study from West Indian, South American, and Galapagos Islands. Offers seeds of same from South America.

BAUDOIN is seeking seeds of native varieties of *Phaseolus lunatus* from southeast Asia and Mauritius Island.

BERNHARDT has in press a paper on the pollination biology of *Schrankia nuttallii* in tall-grass prairie, and is studying relationship of bees and nectarless mimosoids.

BISBY has started a ILDIS/Chapman & Hall phytochemical module for the ILDIS database.

BLACKMON needs *Apios americana* from different areas of its native habitat, and offers improved germplasm of same.

BRENNER is artificially vernalizing biennial *Melilotus* spp. to obtain seeds within eleven months. Offers accessions of 41 spp. with many accessions to germplasm researchers.

BRETELER is monographing *Dialium*.

BRUBAKER needs seeds or plants of *Chapmannia floridana*. See GUNN.

CAMERON is surveying the embryology of taxa in the Bossiaeeae and Mirbelieae, especially those from western Australia.

CARREIRA (new Reader) is studying the pollen of *Campsiandra*, *Cynometra*, *Elizabetha*, and *Martiodendron* in collaboration with taxonomic studies being carried out by others, and needs floral buds before anthesis of these genera and basic literature on palynology of legumes. Offers as exchange suitable material for palynological studies of the families Mimosaceae and Fabaceae. She has papers in press on *Cedrelinga* and legumes of the Brazilian Amazon.

CHEN is studying *Euchrestia*. Needs at least 1 flower of *E. horsfieldii* (Java, Thailand, eastern India, or Bhutan) and of *E. formosra* (Taiwan). Offers specimens and materials of Leguminosae from Yunnan.

COMBES is studying polymorphism in *Phaseolus vulgaris* cv. Tarbais, needs seeds of *Lathyrus cicera*, *L. latifolius*, and *L. sativa*, and offers same from French accessions.

CORBY still needs at least 1 seed of *Mora megistosperma* (Pittier) Britton & Rose.

CZAKO is studying genetic transformation of Leguminosae tree spp., and needs material of *Pterocarpus tessmannii* (see C. Evrard, "Rehabilitation de *Pterocarpus tessmannii* Harms (Papilionaceae)," in *Bull. Jard. Bot. Nat. Belg.* 58: 449-455, 1988), *P. soyauxii*, *P. osun*, *P. santalinus*, *Dalbergia nitidula*, *D. odorifera*, *D. parviflora*, *Haematoxylon africanum* (= *dinteri*), *Peltogyne* spp., *Centrolobium* spp., and *Paramachaerium* spp.

DELBOS is publishing genetic resources passport data for *Lathyrus* and starting RFLP for *L. sativus* and *L. sylvestris*.

DELGADO SALINAS needs seeds of the genus *Vigna*.

DORADO needs seeds of *Brongniartia* from Bolivia and welcomes specimens of same for identification.

DOYLE and colleagues are continuing their molecular phylogenetic studies of tribe Phaseoleae, see GLEANINGS, *The Bean Bag*, November 1989, page 5, and have started studies on storage protein gene evolution in Fabaceae and chloroplast DNA phylogeny of *Astragalus* (with M. Sanderson).

DREWES needs *Macropodium* from South America.

EZE has in press a study on germination of *Prosopis africanum*. Is studying effects of daylight intensity and reserve food material on seedling growth in some Nigerian legumes and productivity and crop yields in the different biosomeric forms of some legumes. Needs seeds of salt tolerant *Prosopis* spp., and offers seeds of *Prosopis africanum*.

FERGUSON is working on the pollen morphology of Sophoreae.

FORTUNE-HOPKINS has taken up residence in Great Britain.

FRANCISCO-ORTEGA, M. T. Jackson, and A. Santos-Guerra were in the Canary Islands (El Hierro, La Palma, La Gomera, Tenerife, and Gran Canaria) during June and August, 1989, collecting germplasm of *Chamaecytisus prolfierus*, sensu lato. The trip was sponsored by IBPGR. 196 accessions were collected from 184 sites, and herbarium specimens and nodules were also collected. Samples are held at the Centro de Conservacion de Recursos Fitogeneticos, Apartado de Correos 1045, Alcala de Henares, Madrid, Spain. All taxa in the *Chamaecytisus prolfierus* complex have nodules. FRANCISCO-ORTEGA needs germplasm of *Chamaecytisus*, mainly North African spp. (*C. albidus* (DC.) Benth. and *C. pulvinatus* (Quezel) Raunaud).

FREITAS DE SILVA, in collaboration with colleagues, is working on the following projects: Monographs of the genera *Campsiandra*, *Copaifera*, *Elizabetha*, *Macrolobium*, and *Martiodendron*; studies in the Brazilian Amazon of natural germination of legumes, legumes fixing nitrogen, morphology of nitrogen fixing nodules, fruit morphology and dispersal of legumes; revision of the legumes in the Brazilian Amazon; and a floristic survey of the legumes in the Reserva Florestal Ducke, Amazonas, Brazil, near Manaus. Needs photocopies of basic bibliography, the loan of herbarium specimens and type specimens or type photographs, and offers herbarium specimens in exchange, principally of the families Mimosaceae and Fabaceae.

GEESINK is working on the Millettieae for *Flore du Cambodge, Laos & Viet Nam* and *Flora of Thailand*.

GILL is studying the legumes used in ethnobotanical practices by major tribes of Nigeria.

GRAVES is working with acid tolerant strains of annual *Medicago* rhizobium. Needs *Vicia amphicarpa*, and offers annual spp. of *Medicago* and *Trifolium*.

GREGORY is listing legumes that are used as host plants by the velvetbean caterpillar, *Anticarsia gemmatilis*. Needs Spanish and Portuguese articles on the above, and offers English articles about this and other insects.

GRIMES is contributing *Cullen* to *Flora Australia*.

GUNN and Jim Plaskowitz are photographing seeds and fruits of all available genera of faboid legumes as part of seed-fruit morphological study. The results will illustrate the third volume of a 3-volumes series on legume seed and fruit morphology. The first volume on Mimosoideae has been published as USDA/ARS Technical Bulletin 1681, and the second volume on Caesalpinioideae is being published and will be sent to all *Bean Bag* Readers as TB 1755. LERSTEN, GUNN, and BRUBAKER's study of lens morphology and anatomy is in press as USDA/ARS Technical Bulletin and will also be sent to all *Bean Bag* Readers. See KIRKBRIDE and WIERSEMA.

HAQ is developing techniques for wide crosses in legumes and wide hybridization in *Vigna*. Needs wild spp. of *Vigna* and *Cajanus*.

HARDER has an article on *Psophocarpus* in press in *Economic Botany* and is investigating the origin of cultivation, developmental physiology, and biosystematic relationships of the winged-bean. Offers seeds of *P. lancifolius*, *P. scandens*, and *P. tetragonolobus*.

HEGNAUER is preparing a 700-page text for *Chemotaxonomie der Leguminosae* which will be volume 10 of *Chemotaxonomie der Pflanzen*. Plans to spend 4-5 years on the project.

HERENDEEN presented his Ph.D. dissertation, entitled "Fossil history of the Leguminosae from the Eocene of Southeastern North America," in April 1990 to Indiana University, Bloomington, Indiana, USA.

HERNANDEZ needs seeds of *Calliandra* and offers determinations of *Calliandra* (Mexico and Central America) and *Zapoteca*.

HEYN is studying the breeding systems and pollen and stigma development in some *Lotus* spp. Needs Mediterranean Trifolieae and *Onobrychis* spp., and offers local legume spp.

HILLIGARDT is working with growth forms of *Anthyllis* and alpine Fabaceae.

HOLLAND (new Reader) , with Bostock and LAWN, is revising *Galactia* in Australia and the indigenous Australian *Vigna* spp.

HUANG (new Reader) is revising *Strongylodon* and needs seeds and herbarium specimens from Asia and Madagascar.

HUGHES, from 1990 to 1992, will conduct an intensive study of *Leucaena* genetic resources in Mexico and Central America. Offers seeds of a range of woody legumes from Mexico and Central America.

HUSSAIN offers seeds of *Sesbania* spp.

Irwin, H. S., is now Director of the Clarke Botanical Garden, New York, USA, and is preparing the 4th edition of the best-selling *America's Garden Book* for MacMillan-Scribners.

ISELY will be pleased to receive legume collections for herbarium exchange. Offers miscellaneous Iowa and U.S. herbarium specimens and Central and South American grasses.

ISHAC needs inoculum for *Crotalaria* spp. and best medium for growing *Azorhizium* sp. (OR5571) for inoculating *Sesbania rostratum*. He is working with biofertilizer application to minimize cost, raise crop production, and increase pest control.

IZAGUIRRE-ARTUCIO is working with the native legumes of Uruguay and adjacent areas. Needs literature on reproductive behavior and biology in legumes, and offers native legume seeds.

JANZEN is studying the biology of *Hymenaea courbaril* and *Enterolobium cyclocarpum*.

KANG is studying evolution of seed size in legumes.

KINGHORN is seeking legume plant materials that are sweet-tasting.

KINGSOLVER continues preparing a handbook of Bruchidae of North America.

KIRKBRIDE will begin a generic review of tribes Loteae and Coronilleae late in 1990. The entry of nodulation data into the ILDIS database has begun, i.e., only presence or absence of nodules. For the first stage, data will be extracted from O. N. Allen and E. K. Allen, *The Leguminosae, A Source Book of Characteristics, Uses, and Nodulation*, 1981, and supplemented with original literature from after 1981. In collaboration with GUNN and RITCHIE will be preparing seed and fruit descriptions and keys for suprageneric taxa of Fabaceae and a phylogenetic analysis based only on seeds and fruits for the legume conference in 1992. See WIERSEMA.

KLITGAARD (new Reader) is starting a monograph of *Macrolobium* for her Ph.D. dissertation.

KOPTUR is studying the ecological interactions of *Lysiloma bahamensis* with its herbivores and protective agents (ants and parasitoids) in the Everglades of Florida, USA.

KRETSCHMER is evaluating seed producing wild peanuts as forage. Offers *Aeschynomene* spp.

KRISHAN (new Reader) is collecting and evaluating germplasm of *Acacia nilotica* from India. Needs germplasm of same, and offers same from India.

KUMAR (Vijay) is considering studies of *Atylosia*, *Alysicarpus*, and *Rhynchosia*. Needs specimens and seeds of same.

LARSEN (K.) is revising *Lathyrus* and with M. Thulin is editor of the Leguminosae for the *Flora Nordica*. K. & S. LARSEN are contributing *Bauhinia* and *Cassia* to *Flora Malesiana*.

LAVIN has started a new project on the chloroplast DNA systematics of *Astragalus*.

LERSTEN, see GUNN.

LEWIS continues with Ph.D. program on Neotropical *Caesalpinia*. Needs seeds of Neotropical *Caesalpinia* spp., and offers naming service for Neotropical Caesalpinioideae and Mimosoideae.

LIBRARY, Herbarium Bogoriense, announces a *Mucuna* paper in press.

LISTON has completed his Ph.D. dissertation titled "An Evolutionary Study of *Astragalus* section *Leptocapi* subsection *Californici*" at the Claremont Graduate School, Claremont, California, USA.

MA is considering the biogeographic relationships of South and Eastern Asian legumes at the genus level with special emphasis on the Sino-Himalayan region. Needs legumes from South and East Asia, and offers Chinese legumes.

MAHESHWARI is starting a new project on the ethnobotany of Indian legumes.

MAMICPIC welcomes germplasm exchange.

MARECHAL has retired from active research, but remains interested in botany and taxonomy of legumes.

MASLIN expects to complete the *Flora of Australia* account of *Acacia* by the end of the year. With STIRTON and others, will assess the generic status of *Acacia*.

MAXTED continues coordination of legume germplasm module for ILDIS, development of identification aids for legume germplasm workers in collaboration with IBPGR, an ecogeographic study of *Vicia*, *Lens*, *Pisum*, and *Trifolium* in Soviet Central Asia in collaboration with IBPGR, and cytological studies of *Vicia* and *Lathyrus* in collaboration with the Jodrell Laboratory, Royal Botanic Gardens, Kew.

MAXWELL is contributing *Dioclea* to *The Flora of the Guianas*.

MOSJIDIS needs seeds of *Lespedeza*, *Vicia*, and other legumes adapted to acid soils that have crop potential, and offer seeds of *Lespedeza* and *Vicia*.

MOSS offers legume seeds from Southern and South-Central Africa, mainly forages and crop relatives.

MLYNIEC is continuing on the rearrangement of her *Vicia* according to the latest taxonomy, and is beginning a new field experiment with some winter *Vicia* spp. Needs winter *Vicia* spp. of agricultural value and winter hardy and early starting forms, and offers some winter *Vicia* spp. and varieties.

MONTEIRO is supervising M.Sc. thesis on a taxonomic revision of *Cratylia* (L. Queiroz) and floristics of legumes in *resting* forests of São Paulo (by F. Garcia).

NEILL, with W. Palcios, continues to work on a Spanish-text field guide to the trees of Amazonian Ecuador with descriptions, keys, illustrations, and uses, which will be in press in late 1990.

NIELSEN is working on the Ceasalpinioideae and Faboideae for *Flore de la Nouvelle Calédonie et dépendances*. Needs *Albizia* and *Arthroclianthus* and offers tropical legumes.

OKOLO is working with in vitro pollen germination of legumes. Needs seeds of tropical legumes, and offers flowers and seeds of Nigerian legumes.

OLDEMAN is working with legume tree crown development in the Guiana tropical rain forest canopy.

ORTEGA needs *Medicago sativa* germplasm adapted to acid soils and *Trifolium pratense* germplasm resistant to *Hylastinus obscurus*, and offers germplasm of *Medicago sativa*, *Trifolium pratense*, *Lotus tenuis*, and *L. uliginosus*.

OSMAN needs seeds of *Sesbania* and offers *Leucaena* seeds.

OVALLE is working with early growth rate and nitrogen fixation potential in 44 legumes considered for introduction in central Chile, characterization and nodulation in *Acacia caven* under field

conditions (spatial and temporal aspects), and screening 40 accessions of *Medicago polymorpha* found in central and northern Chile. Needs efficient strains of *Rhizobium* for testing *Acacia* and *Prosopis* in greenhouse and field conditions, and offers seeds and rhizobial isolates from several South American spp. of *Acacia*, *Prosopis*, and other woody genera of mimosoids and caesalpinoids.

PEDLEY has 2 *Acacia* papers in press.

PLITMANN is studying cleistogamy in amphicarpic legumes, phylogenetic relationships in *Lathyrus* sect. *Cicerula*, and SEM texture of fresh and archeological seeds.

PODLECH is preparing *Astragalus* for *Flora Iranica* and is studying annual Old World *Astragalus* spp.

POTTER needs seeds of *Dolichos*, *Sphenostylis briartii*, *S. marginata* ssp. *marginata*, and *Otoptera* spp., and offers seeds of tropical African faboid legumes.

PRAKESH and B. G. Cameron are studying the comparative embryology of native Faboideae from eastern and western Australia.

RAMAK MAASSOUMI continues with taxonomic and caryosystematics studies of *Astragalus* spp. in Iran. Needs worldwide *Astragalus* literature, and offers herbarium specimens and publications.

RANGAPPA is testing vegetable soybean selections with ozone and metolachlor.

RITCHIE, see KIRKBRIDE.

RODEROS is surveying the genetic diversity in *Acacia mangium* and the effects of growth regulators on the vegetative and reproductive development of *Vigna unguiculata*. Needs seeds and literature of *Acacia* spp., especially *A. mangium*, and offers seeds of *Vigna radiata*, *V. umbellata*, *V. unguiculata*, and *Phaseolus lunatus*.

ROMEO, with T. Pennington, is monographing *Inga*.

RUDD needs specimens of *Aeschynomene*, *Chaetocalyx*, and *Machaerium* for the *Flora of the Guianas*.

SCHNAPP (new Reader) is using in vitro embryo rescue techniques to obtain interspecific hybridization within *Vigna* with the goal of incorporating insect resistance into the cowpea. Needs information on induction of flowering in *Vigna luteola* and *V. vexillata* and cross-pollination techniques in *Vigna*, and also seeds of *Vigna nervosa*. Offers many accessions of *Vigna*, especially in sections *Catjang* and *Vigan*.

SCHREIBER retired in 1989 and now visits the Botanische Staatssammlung, München, irregularly.

SCHRIRE is coordinating a cladistic analysis of Indigoferae in Africa. Needs seeds of tropical African Indigoferae, and offers seeds of southern African Indigoferae.

SCHRODER is studying the biological control of *Macrophomina* in *Phaseolus vulgaris*. Needs seeds of all spp. of *Pachyrhizus*, and offers seeds of *Macroptilium atropurpureum*.

SIEGLER is studying *Acacia* subgenus *Aculeiferum*, and will collect wild legumes.

SHARMA is studying the environmental pollution and cuticular dynamics in Fabaceae.

SCHULTZE-KRAFT needs seeds of *Centrosema tapirapoanense*, *C. dasyanthum*, *C. javagnaensis*, and *C. heptaphyllum*, and offers seeds of other *Centrosema* spp.

SIMPSON needs seeds of *Hoffmannseggia* and *Caesalpinia*, and offers legume seeds from Texas.

SMALL is working on the pollination biology of *Medicago*.

SMARTT has *Grain Legumes: Evolution and Genetic Resources* in press and is conducting comparative evolutionary studies of wild, domesticated forage and grain legumes.

SMITH has completed his survey of cotyledon vascularization and is preparing papers on cotyledon venation patterns in Mimosoideae and Faboideae and has begun a survey of cotyledon histology, intending to cover all tribes. Needs 2-3 seeds of *Mimozyanthus*, not necessarily viable.

SOLADOYE is surveying and documenting underexploited multipurpose legumes in Nigeria.

SOUTHON needs phytochemical data for all Fabaceae, including unpublished results, for inclusion in the ILDIS database.

SPJUT needs information pertaining to synecology of *Cynometra* in Malaya, Madagascar, and Latin America, and offers reprints.

SPRENT is studying field estimations of nitrogen fixation in trees and rhizobial-mycorrhizal interactions in trees. Needs fixed or dried material of suspected nodules on caesalpinoid legumes. Offers access to preserved collection of nearly 2,000 nodules.

STEIN needs viable seeds or liquid preserved shoot tips of *Cynometra* spp. with more than 2 leaflets per leaf.

STEINER is coordinating RFLP analysis of interspecific polymorphism of *Lotus corniculatus* and interspecific polymorphism of other *Lotus* spp.

STIRTON is moving to London in late March 1990 and can be reached at the Herbarium, Royal Botanic Garden, Kew. In collaboration with J. Manning is studying endothelial thickenings in the Fabaceae for presentation at the legume conference in 1992. Needs liquid preserved flowers of *Acosmuim*, *Alex*, *Ateleia*, and *Dussia*.

SUMMERFIELD is involved in a collaborative project with CSIRO, Cunningham Laboratory; AVRDC, Taiwan; and the University of Reading, with funding from IBPGR. They are working on the genetic characterization of time to flowering in diverse genotypes of the soybean.

SUSO is studying the *Vicia faba* reproductive system with emphasis on evolution of the outcrossing rate.

TANNER is working with the biosynthesis of condensed tannins in *Lotus* spp. and *Onobrychis viciifolia*.

TATTOU is preparing keys to *Medicago* spp. in Morocco and to Moroccan genera of the family Fabaceae (both in French). Offers legume seeds of Moroccan annual spp. of *Medicago* (*M. ciliaris*, *M. sauvagei*, *N. polymorpha*, *M. doliata*, *M. orbicularis*, *M. minima*, *M. truncatula*, *M. laciniata*, *M. scutellata*, and *M. tornata*).

TAVARES (new Reader) has completed her Master's thesis entitled "Revisão taxonômica do gênero *Cynometra* L., Caesalpinaceae." She is working on revisions of *Cynometra* for the Americas and *Campsiandra*, *Cedrelinga*, *Elizabetha*, and *Martiodendron* in collaboration with colleagues. Needs bibliography, herbarium specimens, and type specimens or photographs on loan of the above genera, and offers as exchange herbarium specimens of the families Mimosaceae and Fabaceae. She has 3 papers in press on *Cynometra*, 2 that include 2 new species, *C. macrocarpa* A. S. Tavares and *C. marleneae* A. S. Tavares, and 1 on Fabaceae in the Brazilian Amazon.

THOTHATHRI is contributing the legumes for *Flora of India*. Offers reprints from Indian publications and on Asiatic legumes.

TUCKER is studying comparative floral development in Caesalpinioideae, Sophoreae, and Swartzieae. Needs development stages, including very young inflorescences through buds of all sizes and open flowers, of the following genera: *Acosmia*, *Amburana*, *Alexa*, *Baphia*, *Dussia*, and *Ormosia*. The living material should be preserved in FAA (formalin-acetic acid-alcohol), if possible, or glycerin-alcohol. Offers SEM views of selected stages, where needed.

TURNER (B. L.), with B. Milligan, is working with DNA analysis of *Baptisia* and *Thermopsis*.

ULUBELDE has started 4 projects under "The National Food Legumes Research Project": Fababean, chickpea, soybean, and dry bean.

UPCHURCH needs seeds of desert legumes, and offers the same.

VALLS is beginning a new project on the genetic variability in *Arachis villosulicarpa* Hoehne, a Brazilian cultigen.

VAN DER MAESEN, with BRETELER, is working on the legumes of Central Africa. Offers African legumes.

VAN WYK is studying the alkaloids of the Liparieae and Podolyrieae. Needs Crotalarieae (outside of Southern Africa), and offers Crotalarieae from Southern Africa.

VEIGA is doing morphological-biochemical characterizations of *Arachis sylvestris* (Chev.) Chev. populations. Needs literature on the cytogenetics, electrophoresis, and morphology of *Arachis*, and offers germplasm of *Arachis hypogaea* L.

VERDCOURT noted that the next installment of *Mucuna* will be on the Philippine spp. See Wilmot-Dear in literature column. Welcomes *Mucuna* material.

VIETMEYER is surveying economically promising, little-known crops of Africa, including legumes.

VIJAYALAKSHMI needs *Psophocarpus palustris* and offers *P. tetragonolobus*.

WAINES is studying interspecific crosses in *Cicer* and *Phaseolus*.

WEBERLING is continuing with a study of inflorescence growth-forms of European and Mediterrean legume spp.

WEDER is working on the mode of action of various protease inhibitors from legumes against human and bovine enzymes and the protease inhibitors of *Cicer arietinum*.

WELSH is working with one-half of *Astragalus*, *Hedysarum*, *Oxytropis*, and *Sphaerophysa* for *Flora North America*. Needs specimens of aforementioned taxa, and offers Utah general or specific collections.

WESTON needs viable seeds of *Brongniartia* and *Harpalyce*, and offers Australian Bossiaeeae, Brongniarteeae, and Mirbelieae.

WIERSEMA, KIRKBRIDE, and GUNN were notified that their book, *Legume (Fabaceae) Nomenclature in the USDA Germplasm System*, was printed, but publication has been delayed because of irregularities in the printing.

WHITE, G. needs information about seed collections on a world basis and can assist in obtaining legume germplasm in the USDA/ARS system.

WOJCIECHOWSKA needs seeds of *Galega orientalis*, and offers seeds of *Baptisia australis*, *Lupinus mutabilis*, and *Trifolium* spp.

WU and others are working on the cytotaxonomy of *Pueraria* and chemical composition of seeds of *Cylindrokelupha*.

YAKOVLEV is concurrently studying the legumes of the Caucasus and Cuba.

RECENT LEGUME LITERATURE

Eds. Note: Author names in all capital letters are BB Readers. Their full names and addresses are listed in the November 1989 BB Directory. Correspondence about their articles should be sent directly to them.

ARONSON and R. J. Nash. 1989. Infrequent cyanogenesis in *Acacia caven* and general notes on cyanogenic glycoside data in subgenus *Acacia*. *Bulletin of the International Group for the Study of Mimosoideae* 17: 97-110.

ARONSON and OVALLE. 1989. Report on a study of the natural variability, biogeography and potential for genetic improvement of *Acacia caven*. *Bulletin of the International Group for the Study of Mimosoideae* 17: 111-121.

BARNEBY. 1989. Intermountain flora: Vascular plants of the Intermountain West, U.S.A. Volume 3, part B--The Fabales. The New York Botanical Garden, Bronx, New York, U.S.A. [280 pp., illustrations for all 286 species treated, 2 maps, clothbound on acid-free paper, ISBN: 0-89327-346-5. \$61.65 (U.S. orders) or \$63.20 (non U.S. orders) from Scientific Publications Office, The New York Botanical Garden, Bronx, New York 10458 U.S.A. Price includes postage and handling. An outstanding volume of perhaps the premier floristic series under publication in North America. The quality of the binding, printing, layout, and illustrations complement such features as indented keys, complete descriptions, extensive synonymy, original publication citations for names, notes on typification, taxonomic references, extensive distributional information, and valuable taxonomic discussion. However, the most important element of this work is the scholarship of Rupert Barneby. Much of the work concerns genera such as *Astragalus*, *Oxytropis*, *Dalea*, and *Psoralea* which Dr. Barneby has admirably monographed elsewhere; however, new information and perspectives are presented for several of the included taxa. In addition, the Barneby perspective is here extended to other common genera of the region, such as *Trifolium*, *Lupinus*, *Lathyrus*, and *Lotus*. His treatment of intermountain *Trifolium* in several instances improves upon the corresponding treatment in Zohary and Heller's monograph. Likewise, the treatment of *Lupinus*, which is taxonomically similar to that in Hitchcock's Vascular Plants of the

Pacific Northwest, departs dramatically from that of David Dunn and students. This volume also includes contributions by GRIMES for the psoraleoid genera *Psoralidium* and *Pedimelum*. Lesser genera treated, including several introduced and naturalized in the intermountain region, are *Prosopis*, *Desmanthus*, *Acacia*, *Cercis*, *Caesalpinia*, *Sophora*, *Robinia*, *Peteria*, *Amorpha*, *Parryella*, *Phaseolus*, *Colutea*, *Sphaerophysa*, *Alhagi*, *Galega*, *Glycyrrhiza*, *Hedysarum*, *Onobrychis*, *Coronilla*, *Vicia*, *Medicago*, *Melilotus*, and *Thermopsis*. 27 nomenclatural innovations are presented. WIERSEMA]

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Addendum

V Congresso Latinoamericano de Botânica

Marli Pires Morim de Lima

During the *V Congresso Latinoamericano de Botânica*, Havana, Cuba 24-29 June 1990, at a day and time to be set, there will be a meeting titled *Situación Actual de los Estudios de Leguminosas en America Latina*. The objectives of the meeting are: 1) To evaluate the actual situation of studies on the Fabaceae in Latin America; and 2) to increase reciprocal exchanges between Latin American research workers interested in Fabaceae. The meeting program is:

- I. General considerations - Marli Pires Morim de Lima, Coordinator
- II. Presentations by attendees on their legume studies and those with which they are familiar
- III. Discussions and proposals
- IV. Conclusions

A report of the meeting, with a list of attendees and their addresses, will be included in the November 1990 *Bean Bag*.

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RETURN BY SEPTEMBER 30, 1990

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